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USE FULNESS OF THE SOCIETY OF SIGMA XI

G. A. MILLER

The Society of the Sigma Xi is, in part, a collection of miniature academies of sciences located in various scientific centers. In this respect it does not differ widely from the "Science Clubs", but it has the significant advantage of a national organization with its stimulating influence. This influence has recently been greatly strengthened by the establishment of this QUARTERLY, which enables the various chapters to profit more fully by the experiences of others and thus tends towards more rapid permanent advances.

There have been great changes as regards scientific conditions since the founding of this Society. Facilities for scientific investigation have been improved and the popular interest in these investigations has been greatly increased by many remarkable discoveries. Even the great conservative farming community delights to attach the term scientific to its operations, and looks to scientific investigation for its greatest advances.

While these facts might at first seem to indicate that a national society "to encourage original investigation in science pure and applied" had outlived its usefulness, further considerations show that they confirm their importance of such a society. The inexhaustible richness of science, combined with the fact that human efforts seem to succeed often only by the most artificial methods to arrive at infinitesimal parts of this richness, continually calls for more laborers in this field.

The ideals of a scientific academy probably are the strongest elements of usefulness in most of the chapters of the Sigma Xi. These ideals include also the publication of desirable scientific matter, which is the second object enumerated in the constitution. In fact, the Illinois Chapter went a step further along this line during the last year by granting financial aid towards the payment of the expenses connected with a particular investigator.

The remarkable influence which scientific academies have had in the progress of knowledge make this element of the work of the Sigma Xi additionally attractive to all those whose heart is in the work of increasing scientific knowledge. The election of faculty and graduate members may also be regarded as akin to elections of academic members, since such novitiates should have given definite proof of ability and success.

The election of undergraduates seems, however, to be based on an entirely different principle. By such elections the Society of the Sigma Xi has doubtless performed in the past a useful service, but many think that the time has come when such elections are doing more harm than good. The rapid growth of scientific knowledge combined with higher standards make it generally impossible in many of the scientific subjects for an undergraduate to exhibit definite proof of ability and inclination to do successful scientific research work.

While it may not be undesirable for chapters to differ widely in some of their practices, there evidently ought to be uniformity as regards standards for admission. Members naturally drift from one chapter to another, and, what is more important, students ought to have the same privileges as regards membership in a national society wherever this society is represented.

The three chapters of the Society with which I have been connected have elected undergraduates to membership. Hence I have had no direct experience as regards the "appeal to the ambition of the undergraduate made by chapters where only graduates are elected, which Professor Coulter presented so well in this QUARTERLY (I:69). Moreover, I have seen a number of undesirable results from the present method of undergraduate elections.

On the other hand, I am one of those who believe that the Sigma Xi should continue to exert a strong and direct influence on a considerable number of the most promising undergraduates. The educational ideals for which it stands should influence many of those who cannot become eminent investigators, and they should help others to find out early that they have sufficient ability along the line of original investigation to merit recognition on the part of those who are most competent to judge.

The dual membership explained by Professor Nichols in this QUARTERLY (I:87) seems to me to furnish the best solution of present difficulties, and to constitute the next normal step forward in the sphere of usefulness of our Society. The arguments against such a plan, which appeared in the following number of the QUARTERLY, represent a point of view which appeals to me less forcibly.

It should perhaps be emphasized that the fraternal relations which this Society aims to foster are of a peculiar type. They are "fraternal relations among investigators". As I understand it this means in part, that we should fix our attention for the time on the scientific usefulness of each other, and should recognize the importance of a free scientific interplay. It is a fraternity based on one element of usefulness, and hence implies our high appreciation of this element.

As this element can be measured with a fair degree of accuracy, decided inequalities are often openly recognized. Hence the duality of membership furnishes a much less artificial distinction than would be the case where various complex elements were involved in the selection of members. As a concrete illustration of this distinction I may refer to the following statement, recently made to a Board of Electors: "While I do not like the man I nominated him in recognition of his great ability as an investigator." The man was elected without opposition.

In a society where fraternity is based upon an element whose development is so largely a matter of time and work, duality of membership offers a decided advantage to the younger members in providing a new goal where achievements are openly recognized. With the rapid scientific advancement there has come a much greater scientific difference between the undergraduate and the leading scientists in the faculty. The newly elected undergraduate does not regard it as a discredit to him if this difference is openly recognized. In fact, he generally feels better in an atmosphere of honest competition, and it is enough for him to be selected as one of the promising ones on the way.

Duality of membership should not affect the scientific fraternal relations, since these are based upon scientific merits, and the wide differences of these merits are continually felt. It is, of course, impossible to provide as many grades of membership as there are grades of attainments or enthusiasm. The proposed dual membership aims to provide a conservative step towards greater uniformity, without restricting the fields of usefulness of the Society.

I take it for granted that most of the older members of the Sigma Xi have at times become lukewarm and have asked themselves the question whether this Society is really worthy of their support. In this age of specialization many of us tend to become time-misers as regards matters unrelated to our own field of work. The fact that this Society has prospered under these adverse conditions is a strong argument in its favor. It must, however, be admitted that it has not always wielded as strong an influence for good as the magnitude and importance of the field represented would seem to warrant.

Whether it should adopt a more militant and aggressive method of operation is questionable. According to its Constitution it must consider from an important single point of view some of the scientific appointees by the President of the University. Its favorable conclusions are generally made public, while the unfavorable ones are usually not mentioned in public. In some cases the latter are the more significant and official quietude has not always destroyed the wholesome influence which such conclusions should exert.

Whatever our view may be in regard to extensions of the usefulness of the Society, I presume all would agree that these extensions should be questions of minor importance. The scientific academy ideals should dominate, and the core of a successful chapter of the Sigma Xi is research activity of high order in its own midst and the profound scientific respect which is cultivated by such activity. Unless important scientific results are announced and explained occasionally at its meetings real Sigma Xi life is impossible.

THE VALUE OF AN ALUMNI CHAPTER

Marcus Benjamin

"Of what value can the Sigma Xi be to a graduate who is not within easy reach of his home chapter?" is a question that has often been put to me. Frankly I can think of but one answer, and that is: "By being helpful."

It seems to me that the Sigma Xi came into existence largely because of the desirability of having an organization that would be helpful to the younger students in science. Surely its motto brings out that fact most distinctively, for what is the use of being "Companions in zealous research" unless we are helpful to one another?

Most of us in this world are sadly in need of help all the time. Help that will enable us to meet the many demands that are made on us in consequence of the tremendous pressure that is continuously being exerted to compel us to hold our own in the specialty that we are developing or in the place that we have been called to fill.

I am finding that more and more men who should devote their vacations to rest and recuperation are giving them up to hard work. Every year the summer colony of those who come to Washington increases, and it consists largely of teachers who spend their vacation-days either among the books in the Library of Congress or in the laboratories of the National Museum. Even a trip to Europe in hot weather with visits to laboratories and museums is far from being a recreation. That sort of thing, however, has become necessary in order that students, and especially those engaged in the